



PTO/SB/08A (10-01)

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Substitute for form 1449A/PTO			Complete if Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT (use as many sheets as necessary)			Application Number	10/519,150
			Filing Date	August 16, 2005
			First Named Inventor	FLEXMAN, ET AL.
			Art Unit	2856
			Examiner Name	Not Yet Assigned
Sheet 1	of 6	Attorney Docket Number	WRA0011-US	

U.S. PATENT DOCUMENTS					
Examiner Initials [*]	Cite No. ¹	Document Number	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
LMA		US4,129,822	12/12/1978	Traficante	
↓		US4,568,880	02/04/1986	Sugimoto	
		US4,612,505	09/16/1986	Zijlstra	
		US4,628,264	12/09/1986	Rzedzian	
		US4,635,017	01/06/1987	Ries	
		US4,724,389	02/09/1988	Hyde et al.	
		US4,956,609	09/11/1990	Miyajima	
		US5,041,791	08/20/1991	Ackerman et al.	
		US5,168,224	12/01/1992	Maruizumi et al.	
		US5,206,592	04/27/1993	Buess et al.	
		US5,233,300	08/03/1993	Buess et al.	
		US5,365,171	11/15/1994	Buess et al.	
		US5,414,357	05/09/1995	Kernevez et al.	
		US5,457,385	10/10/1995	Sydney et al.	
		US5,546,000	08/13/1996	Maas et al.	
		US5,583,437	12/10/1996	Smith et al.	
		US5,592,083	01/07/1997	Magnuson et al.	
		US5,594,338	01/14/1997	Magnuson	
		US5,680,047	10/21/1997	Srinivasan et al.	
		US5,804,967	09/08/1998	Miller et al.	
		US5,982,179	11/09/1999	Munsell et al.	
		US5,986,455	11/16/1999	Magnuson	
↓		US6,091,240	07/18/2000	Smith et al.	
		US6,194,898	02/27/2001	Magnuson et al.	
		US6,208,136	03/27/2001	Smith et al.	

FOREIGN PATENT DOCUMENTS					
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LMA		EP 0 365 065	04/25/1990	National Research Development Corp.	
↓		GB 2 200 462	08/03/1988	National Research Development Corp.	
		GB 2 254 923	10/21/1992	British Technology	
		GB 2 255 414	11/04/1992	British Technology	
↓		GB 2 298 283	08/28/1996	Univ. of Queensland	
		GB 2 319 086	05/13/1998	British Technology	

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				Art Unit	2856
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				Attorney Docket Number	WRA0011-US
Sheet	2	of	6		

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FOREIGN PATENT DOCUMENTS						
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LMA 		GB 2 319 852	06/03/1998	British Technology		
		JP 04-038495	02/07/1992	Hitachi, Ltd.		
		JP 04-064046	02/28/1992	Hitachi, Ltd.		
		JP 05-133911	05/28/1993	Hitachi, Ltd.		
		JP 05-209948	08/20/1993	JEOL		
		JP 07-260719	10/13/1995	Yasuo		
		RU 2087920	08/20/1997	Urals Materials Scientific Tools Insti.		
		WO 01/06925	02/01/2001	The Johns Hopkins University		
		WO 01/69276	09/20/2001	MRI Devices Corp.		
		WO 92/17794	10/15/1992	British Technology		
		WO 92/21989	12/10/1992	British Technology		

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Attorney Docket Number

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LMA		WO 93/11441	06/10/1993	British Technology		
↓		WO 96/26453	08/29/1996	British Technology		
		WO 96/30913	10/03/1996	Quantum Magnetics		
		WO 99/19740	04/22/1999	BTG International		
		WO 99/45408	09/10/1999	BTG International		

**Examiner
Signature**

Date Considered

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OTHER PRIOR ART -- NON PATENT LITERATURE DOCUMENTS			
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LMA		SINGSAAS ET AL., "QR-Based Personnel Screening Portal for Detection of Concealed Explosives," The Third International Aviation Security Technology Symposium, Tropicana Resort & Casino, Atlantic City, NJ, Nov. 27-30, 2001	<input type="checkbox"/>
		FLEXMAN ET AL., "The Detection of Explosives in Airport Luggage Using the Direct Nuclear Quadrupole Resonance Method," Detection of Bulk Explosives Advanced Techniques Against Terrorism, Proceedings of the NATO Advanced Research Workshop, held in St. Petersburg, Russia, 16-21 June, 2003, Series: NATO Science Series II: Mathematics, Physics and Chemistry, Schubert, Kuznetsov (Eds.), Vol. 138, 2004, pp. 113-124	<input type="checkbox"/>
		HIRSCHFELD, "Short Range Remote NQR Measurements," Journal of Molecular Structure, Vol. 58, 1980, pp. 63-77	<input type="checkbox"/>
		SHAW ET AL., "Quadrupole Resonance Scanner for Narcotics Detection," SPIE Cargo Inspection Technologies, Vo. 2276, 1994, pp. 150-154	<input type="checkbox"/>
		RAMACHANDRAN ET AL., "A Coherent Nuclear Quadrupole Pulse and Double Resonance Spectrometer," Journal of Physics E: Scientific Instruments, Vol. 16, 1983, pp. 643-648	<input type="checkbox"/>
		SHAW, "A Brief (and Anecdotal) History of Explosives Detection Using Pure Quadrupole Resonance," The NQI Newsletter, Vol. 1, No. 3, March 1994, pp. 26-29	<input type="checkbox"/>
		GONANO, "Nuclear Magnetic Resonance and Nuclear Quadrupole Resonance for Bomb Detection," Electro. Conf. Record, Vol. 4, 24-25 April 1979, pp. 1-5	<input type="checkbox"/>
		SHAW, "Narcotics Detection Using Nuclear Quadrupole Resonance (NQR)," Contraband and Cargo Inspection Technology International Symposium, 28-30 October 1992, pp. 333-341	<input type="checkbox"/>
		PETERSEN ET AL., "A Pulsed Nuclear Quadrupole Resonance Spectrometer," Advances in Nuclear Quadrupole Resonance, ed. JAS Smith, Vol. 1, 1974, pp. 179-184	<input type="checkbox"/>
		CHEN ET AL., "A Three Dimensional Analysis of Slotted Tube Resonator for MRI," IEEE Transactions on Medical Imaging, Vol. 13, No. 4, December 1994, pp. 587-593	<input type="checkbox"/>
↓		RAYNER ET AL., "Explosive Detection Using Quadrupole Resonance Analysis, SPIE, Vol. 2936, 1997, pp. 22-30	<input type="checkbox"/>

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OTHER PRIOR ART – NON PATENT LITERATURE DOCUMENTS			
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LMA		RAYNER ET AL., "Performance Trade-Offs in Quadrupole Resonance Analysis Screening," Proceedings of Second Explosives Detection Technology Symposium and Aviation Security Technology Conference, FAA Technical Centre, Atlantic City, NJ 1996, pp. 287-292	<input type="checkbox"/>
		RAAD ET AL., "Optimization of NMR Receiver Bandwidth by Inductive Coupling," Magnetic Resonance Imaging, Vol. 10, 1992, pp. 55-65	<input type="checkbox"/>
		PETERSEN, "Low Frequency NQR Matching Network," The NQR Newsletter, edited by R.A. Marino	<input type="checkbox"/>
		NOBLE, "NQR for Bomb Detection," Analytical Chemistry, Vol. 66, No. 5, 1 March 1994, pp. 320A-324A	<input type="checkbox"/>
		MARINO ET AL., "Multiple Spin Echoes in Pure Quadrupole Resonance," The Journal of Chemical Physics, Vol. 67, No. 7, 1 October 1977, pp. 3388-3389	<input type="checkbox"/>
		LI ET AL., "A Novel Probe Design for Pulsed Nitrogen-14 Nuclear Quadrupole Resonance Spectrometer," Review of Scientific Instruments, Vol. 67, No. 3, March 1996, pp. 704-706	<input type="checkbox"/>
		KLAINER ET AL., "Fourier Transform Nuclear Quadrupole Resonance Spectroscopy," in Fourier, Hadamard and Hilbert Transforms in Chemistry, A.G. Marshall, ed., Plenum, NY, 1982, pp. 147-182	<input type="checkbox"/>
		BURNETT ET AL., "New Scanner Uses Quadrupole Resonance to Detect Narcotics and Explosives Hidden in Cargo," ICAO Journal, December 1995, pp. 14-15	<input type="checkbox"/>
		BUTLER ET AL., "High-Power Radio Frequency Irradiation system With Automatic Tuning," Review of Scientific Instruments, Vol. 53, No. 7, July 1982, pp. 984-988	<input type="checkbox"/>
		RAYNER ET AL., "Explosives Detection Using Quadrupole Resonance Analysis," Proceedings of Second Explosives Detection Technology Symposium and Aviation Security Technology Conference, FAA Technical Centre, Atlantic City, NJ, 1996, pp. 275-280	<input type="checkbox"/>
		BURNETT ET AL., "Quadrupole Resonance Explosives Detection: Past, Present and Future," Proceedings of the Second Explosives Detection Technology Symposium and Aviation Security Technology Conference, FAA Technical Centre, Atlantic City, NJ 1996, pp. 270-274	<input type="checkbox"/>

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LMA		BUESS ET AL., "Explosives Detection by ¹⁴ N Pure NQR," Advances in Analysis and Detection of Explosives, 1993, pp. 361-368	<input type="checkbox"/>
		GEROTHANASSIS, "Methods of Avoiding the Effects of Acoustic Ringing in Pulsed Fourier Transform Nuclear Magnetic Resonance Spectroscopy, Progress in NMR Spectroscopy, Vol. 19, 1987, pp. 267-329	<input type="checkbox"/>
		GARROWAY ET AL., "Explosives Detection by Nuclear Quadrupole Resonance (NQR)," SPIE, Vol. 2276, Cargo Inspection Technologies, 1994, pp. 139-149	<input type="checkbox"/>
		GARROWAY ET AL., "Narcotics and Explosives Detection by ¹⁴ N Pure NQR," SPIE, Vol. 2092, Substance Detection Systems, 1993, pp. 318-327	<input type="checkbox"/>
		HWANG ET AL., "Automatic Probe Tuning and Matching," Magnetic Resonance in Medicine, Vol. 39, No. 2, 1998, pp. 214-222	<input type="checkbox"/>
		HORNAK ET AL., "Elementary Single Turn Solenoids Used as the Transmitter and Receiver in Magnetic Resonance Imaging," Magnetic Resonance Imaging, Vol. 5, 1987, pp. 233-237	<input type="checkbox"/>
		HARDING ET AL., "A Pulsed NQR-FFT Spectrometer for Nitrogen-14," Journal of Magnetic Resonance," Vol. 36, 1979, pp. 21-33	<input type="checkbox"/>
↓		GIBSON ET AL., "Proton NMR and Piezoelectricity in Tetramethylammonium Chloride," Journal of Chemical Physics, Vol. 57, No. 11, 1 December 1972, pp. 4688-4693	<input type="checkbox"/>
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			<input type="checkbox"/>

Examiner Signature	/Louis Arana/	Date Considered	10/25/2006
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